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from the group consisting of the following 1 , formula 2, and formula 3 that is prepared in the step b), where the metal alkoxide solution is made from metal alkoxide power dissolved in alcohol;

(d) drying the surface-treated compound; and

5 (e) heat-treating a powder dried in the step d), under conditions of circulating dry air or O<sub>2</sub>, of compound selected from the group consisting of the following formula 1, formula 2, and formula 3 that is surface-treated in the step c), wherein formula 1 is Li<sub>a</sub>Ni<sub>1-x-y</sub>Co<sub>x</sub>M<sub>y</sub>O<sub>2</sub>, formula 2 is Li<sub>a</sub>Ni<sub>1-x-y</sub>Co<sub>x</sub>M<sub>y</sub>O<sub>2-z</sub>F<sub>z</sub>, formula 3 is Li<sub>a</sub>Ni<sub>1-x-y</sub>Co<sub>x</sub>M<sub>y</sub>O<sub>2-z</sub>S<sub>z</sub>, and M is a metal selected from the group consisting of Al, Mg, Sr, La, Ce, V, and Ti, and wherein 0≤x<0.99, 0.01≤y≤0.1, 0.01≤z≤0.1, and 1.00≤a≤1.1

10 5. A method according to claim 4, wherein the metal of the metal alkoxide is a metal selected from the group consisting of Al, Mg, Sr, La, Ce, V, and Ti.

15 6. A method according to claim 4, wherein the concentration of the metal alkoxide solution is 1 to 30 weight%.

7. A method according to claim 4, wherein the Ni<sub>1-x-y</sub>Co<sub>x</sub>M<sub>y</sub>(OH)<sub>2</sub> (M is a metal selected from the group consisting of Al, Mg, Sr, La, Ce, V, and Ti and wherein 0≤x<0.99 and 0.01≤y≤0.1) is prepared with a metal solution comprising a Ni-salt, Co-salt, and M-salt as a starting material.

20 8. A method according to claim 4, wherein the temperature of the heat-treatment in the step e) is 200 to 1000°C and the duration of the heat-treatment is 2 to 30 hours.